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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,860	06/14/2005	Timothy Daniel Shaffer	2003B133C	9295
23455	7590	06/28/2006	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY			RABAGO, ROBERTO	
5200 BAYWAY DRIVE				
P.O. BOX 2149			ART UNIT	PAPER NUMBER
BAYTOWN, TX 77522-2149			1713	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/538,860	SHAFFER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Roberto Rábago	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-83 and 87-95 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-83 and 87-95 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 14 June 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-83 and 87-95 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

All of the claims are defined in part by a required formula (see claim 1).

However, the scope of polymers defined by this formula is indefinite in view of the following.

(a) The formula includes the requirement that "m" be either 1.10 to 1.25 or greater than 1.5, and the specification has stated that "The best fit value of this equation yields the value of m for copolymerization of the isoolefin and multiolefin in each diluent" (paragraph [0096]), and a plot which appears to form the basis of determining the best fit is shown as Fig. 4. Therefore, given the manner in which the specification has stated the value of m is determined, it is not understood how the value of m can be determined for an individual copolymer. If m is determined over a range of conditions in each diluent, it would appear determining m for an individual polymer is not possible. The claims are indefinite because one of ordinary skill in the art could not determine whether a particular polymer falls within the scope of those claimed.

(b) The meaning of "m" is further indefinite in that the manner in which the "best fit" is determined is ambiguous. Specifically, the specification has stated that "The best fit value of this equation yields the value of m for copolymerization of the isoolefin and multiolefin in each diluent" (paragraph [0096]), and a plot which appears to form the basis of determining the best fit is shown as Fig. 4. The formula is a quadratic function which is necessarily non-linear, and the placement of the "best fit" line will depend entirely on the number of points and the breadth of mole ratios measured. Since the claims are silent on all parameters required in determination of a best fit, the result would be arbitrary over a substantial range of values. Therefore, the claims are indefinite because they do not provide for an unambiguous determination of m.

(c) The claims are further indefinite because the manner in which "A" is defined in the claims is not consistent with the apparent manner in which A is determined in the supporting examples. Specifically, the claims require than A is the molar ratio of multiolefin to isoolefin in the copolymer. However, Examples 149-152 (the only examples which have made a determination of required parameter m) report only the mole%, and Figure 4 has used mole% in the apparent determination of the best fit (i.e., "m"). Mole ratio is not equivalent to mole%, and the inconsistency raises the question of whether the claims intend for A to correspond to mole%.

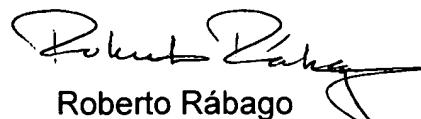
The claims set forth a polymer requiring the highly obscure property "m", yet the claimed range is very close to polymers which appear to correspond to those made using prior art procedures (see Table 26). Furthermore, all of the claims rely on the formula of claim 1 as the central feature. Accordingly, a proper review of the prior art

(including those reference cited on the IDS) will be deferred until the above issues have been clarified.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
June 25, 2006